

## 14. E/PO PROPOSAL

### Education and Public Outreach Operations Plan

In alignment with the commitments of NASA's Office of Space Science and Sun Earth Connection Forum, Ulysses has substantially contributed to scientific, mathematical, and technical literacy by carrying out a comprehensive education and public outreach program. The entire NASA/ESA Ulysses project management and science teams are actively involved and committed to carrying out a meaningful, effective, credible, and appropriate E/PO program to enhance K-14 science education and to expand public understanding of science.

Over the past two years, the Ulysses Project has created learning opportunities so as to inspire America's students and to enlighten inquisitive minds. The project has leveraged its extremely limited E/PO budget by partnering with others and participation in established programs. Participation in the following programs describes how the project meets or exceeds NASA's E/PO goals.

#### 14.1 Engaging the Public

Ulysses partnered the NASA/JPL Solar System Ambassadors Program (JPL), which recruits volunteers from across the United States to conduct public events in their local areas, including exhibits on space, radio programs, concerts and town hall meetings in primarily rural locations. There are 275 Ambassadors represented in all 50 states. Ulysses Principal Investigators trained ~47 Ambassadors who, in turn, reached over 1.3 million people a year in FY01-02.

Partnering with Space Place (JPL), Ulysses disseminates SEC literature to more than 300 rural museums, libraries and planetariums for K-6 students.



Figure 1: JPL Open House 2001

The Ulysses HI-SCALE team participated in a half hour program on studies of the Sun on New Jersey Network (NJN) public television. Features were New Jersey Institute of Technology, Big Bear

Solar Observatory, Owens Valley Solar Radio Array, and Ulysses.

The JPL Open House welcomes 50,000+ people over a two-day period. Exhibits, models and handouts were available for general public dissemination while team members answered questions regarding the mission and various science objectives.

#### 14.1.1 World Wide Web:

The Ulysses presence in hyperspace has extended to a total of 13 web sites. The JPL managed website averages approximately 18,000 visitors per month. All websites can be accessed via the JPL homepage at <http://ulysses.jpl.nasa.gov>. In addition, each home page provides links to the other mission partners both national and international, creating further worldwide exposure.

#### 14.1.2 Media Relations

Collaborating with NASA/JPL Media Relations Offices, ESA and Principal Investigator Institutions, Ulysses disseminated 10 press releases related to SEC science and research in FY01-02. <http://sse.jpl.nasa.gov/whatsnew>

#### 14.2 Informal Education



Figure 2: LA's BEST Students Participating in SEC Activity

"LA's BEST" is a unique partnership including the City of Los Angeles/Office of the Mayor, the Los Angeles Unified School District and the private sector. "LA's BEST" provides a safe and supervised after school enrichment, education and recreation program for elementary school children, ages 5 to 12, at 104 schools throughout the City of Los Angeles. Ulysses team members visit 3-5 LA County schools each year in support of LA's Best program. Presenters provide a Sun-Earth-Connection over-

view and provide activities related to the SEC missions and the roadmap.

Ulysses team members lead “Sun-Earth Day” at JPL and Pasadena, which is a national celebration of the Sun, the space around the Earth (geo-space), and its effects on life on our planet. To draw parallels between Native American cultures and NASA’s Sun-Earth Connection research, Ulysses partnered with Telescopes in Education (TIE) and hosted 160 eighth grade students at JPL.



Figure 3: Eliot Middle School Participates in Sun-Earth-Day at JPL

The students engaged in remote operation of the Mt. Wilson telescope, safely viewed sunspots and took solar images for the Sun-Earth-Day web cast. In classrooms and planetariums, project personnel shared stories, images, and activities with 500 local students in grades 5-12, which were primarily 80% minority, and with one special needs elementary school.



Figure 4: Sun-Earth-Day at JPL

Ulysses piloted a ‘Teach-One-Teach-Many’ program. The goal of this program is to provide an opportunity for students to learn about all aspects of mission elements through one-on-one interviews.

Students do research, formulate related questions and prepare a class presentation on what was learned. This is a leveraging program where a few interviewers, through their presentations, teach many more students. Approximately 300 students were reached in 4 LA County school districts.



Figure 5: Student Interviews Ulysses Team Member for Interview Program

#### 14.3 Plans for FY04-07-Engaging the Public:

The NASA/JPL Solar System Ambassadors Program is expected to expand from its current 275 volunteers (2002) by 15-25% each year with a 4-year goal of 2-3 additional Ambassadors per state. Ulysses will conduct a minimum of two trainings each year. Ambassadors will be exposed to key personnel while examining new science results from the Ulysses Mission.

Working with the Space Place, Ulysses project management and the Science Directorate at Marshall Space Flight Center Ulysses will develop an activity for the site. The proposed activity will be based on the Solar Spitwad article from the Science @ NASA website. Ulysses EP/O materials and exhibits will be rotated to participating Space Place partners. Average exposure is expected to be 50,000 people per year at one partnering center.

“Community Nights” a partnership with the Arizona State University Mars K-12 Education Department, Ulysses project proposes participation in the development of Solar System kits. These kits will be beta-tested in mid-summer 2003 by 100 Girl Scout Troops throughout the United States and will include information regarding the Ulysses mission and SEC science. The portable exhibits can be loaned to educational facilities, community organizations and other NASA EPO partners.

We will also partner with the Deep Space Network (DSN) and other JPL projects in the Barstow Space Expo for educators and students near the Goldstone facility.

#### **14.3.1 World Wide Web:**

The Ulysses Project team will continue to maintain and update the website on a quarterly basis. Plans include new on-line activities, additional educational resources and updated science news.

#### **14.3.2 Public Information:**

Working with NASA and JPL media office, Ulysses plans for press releases on Solar Maximum and the Far Jupiter Encounter. Ulysses Science Team members will submit at least 3 science nuggets a year to the Science Directorate at Marshall Space Center to be included in the [Science@NASA](mailto:Science@NASA) website.

#### **14.4 Informal Education:**

By providing opportunities of K-12 teacher training, enhancing curriculum and engaging students in NASA related career fields, the Ulysses project plans to support Presidential Executive Order 13021 Tribal College, Tribal Pre College Initiatives. The project will work with the JPL Tribal College Initiative in the Minority Education Initiatives in the Education and Public Outreach Office.

The Ulysses Team at JPL will continue work with the LA's Best program expanding school visits to 8-10 each year. Team members will continue to engage local schools in the yearly Sun-Earth-Day activities with a commitment to collaborate more with our ESA partners and Goddard Space Center Student Observation Network (SON) on student research and activities.

#### **14.5 Conferences/Workshops**

Continue to support educational conferences requiring NASA Center presence, i.e., NSTA, CSTA, and Space Congress.

#### **14.6 E/PO Products**

The project will develop products to support the education and public outreach programs. These will include, as appropriate, brochures, decals, educational content for web sites and package paraphernalia for conferences and workshops. Educational content will also be made available on CDROMs which will be distributed through the NASA Education Resource Centers and through distribution to schools involved in the various E/PO programs in which the Ulysses project is involved.

#### **14.7 E/PO Budget**

The Ulysses E/PO budget is small of necessity. Historically, there has been no funds specifically

identified for outreach, so a small amount has been taken from the limited MO&DA budget. By participating with other missions at JPL and with the Sun-Earth Connection theme, the project has been able to leverage its meager funds. The allocated funds will be used for fees to participate in the various partnerships the project will be involved in and to pay for the E/PO products outlined above.

The optimal proposal would include additional funds to create additional products and to increase project participation in other education and public outreach venues.

The E/PO budget is embedded in "Other Mission Operations" (Item 2c of Tables I and II) in Appendix 1.